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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/786,693

02/25/2004

Andreas Maurer

1-16513

3690

1678 7590 11/01/2007  
MARSHALL & MELHORN, LLC  
FOUR SEAGATE - EIGHTH FLOOR  
TOLEDO, OH 43604

EXAMINER

WYROZEBSKI LEE, KATARZYNA I

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

11/01/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/786,693		MAURER ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Katarzyna Wyrozebski		1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 28-31, 33-49 and 51-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 28-43, 45-49, 52 and 53 is/are rejected.
- 7) ☒ Claim(s) 44 and 51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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In their response dated 9/4/2007 the applicants amended claims in following manner:

Claim 1 contains polymeric components that will be recovered, except that the applicants omitted limitation of PVC. The applicants added new claim open with respect to the polymeric material and rendered claim 31 dependent on new claim 53. The above amendment requires new search and consideration with respect to previously pending claims. The applicants removed one of the possible polymers that were previously listed.

Applicants further indicated that newly added claim 53 contains limitation of precipitated polymer being physically separated from the liquid phase. Such limitation is viewed as intrinsic since, if the purpose of the claim is to obtain recycled polymer, the polymer is recovered completely.

In view of cancellation of PVC following office action is final necessitated by amendment. Claims 1-27, 32 and 50 are cancelled. Claims 28-31, 33-49, 51-53 are pending.

Following claims also contain minor informalities that need to be corrected:

Claim 47 should have been addressed since incorporating halogenated flame retardant into claim 28 would render broader in scope with respect to the halogenated material.

Claim 33 should be dependent on claim 48, since claim 1 does not introduce plasticizers.

Applicants have yet to provide all priority documents. Such documents are required if applicants wish to claim priority to the foreign application disclosed in oath submitted on 2/25/2004.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 28, 29, 31, 34-43, 45, 47, 52, 53 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 949,293.

EP'293 discloses process for recovering of thermoplastic material that contains halogenated flame retardants.

Polymers of EP'293 include polystyrene resins as well as its copolymers (ABS, blends with other polymers (PB) and the like [0002, 0022].

The process of EP'293 teaches dissolving target styrene containing polymer in a solvent and physically separating the polymer.

Flame retardants of EP'293 include brominated compounds based on bisphenol A, polybrominated biphenyls, bis-tribromophenoxy ethane and the like [0019]. Ether based flame retardants are encompassed by formula 1 [0015].

Solvents utilized to dissolve thermoplastic include acetone, toluene, alcohols (such as methanol), aliphatic hydrocarbons, glycol ethers (for example one in Formula 3) and the like [0030-0031].

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Once dissolved the insolubles are removed from polymer solution via filtration and/or precipitation [0042-0043]. In the same paragraph EP'293 further indicates that the recycled polymers are-reused in various articles, which imply extrusion and some type of the molding. Solvents can be purified by distillation to remove any other impurities and be reused.

EP'293 also teaches that addition of water to the glycol ether solution results in precipitation of the thermoplastic polymer and the resulting polymer is obtained by removal of water and drying. Since water has boiling point of 100°C it is given that the drying temperature has to be above 50°C [0032]. For precipitation the applicants are requested to turn to examples 6 and 7 of EP'293.

3. Claims 53 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by BROYDE (US 4,071,479) in view of evidence in JP03265641 (Abstract).

The discussion of the disclosure of the prior art of BROYDE from paragraph 4 of the office action dated 11/19/2007 is incorporated here by reference.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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5. Claims 28-31, 34-43, 45-47, 52, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 949,293.

In addition to the teachings above as discussed in paragraph 2 of this office action, EP document renders following aspects of the invention obvious:

a) use of nozzle – although EP document does not specifically disclose that solvent and/or non-solvent are added with use of nozzle such is obvious. Solvents of the EP disclosure are added in huge excess of polymeric material and it is transferred between different containers, which would suggest rather large apparatus. One of ordinary skill in the art would not utilize a pipette. In addition term “nozzle” can signify many different methods of adding solvents to the composition.

b) reduction of flame retardants to remove halogens – the above is well known electrochemical process, which results in removal of halogens from the compound. One of ordinary skill in the art would know how process such compounds.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize the disclosure of EP and thereby obtain the claimed invention. Such modification would still allow one of ordinary skill in the art to recover polystyrene from post-consumer used articles.

6. Claims 33, 48 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 949,293 in view of MUSKAT (US 2,332,461).

The discussion of the disclosure of EP'293 from paragraph 2 or 5 of this office action is incorporated here by reference.

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The difference between the present invention and the teachings of EP'293 is recitation of plasticizer and glass.

With respect to the above difference, the prior art of MUSKAT discloses composition comprising clear polymers such as polystyrene, polyvinyl butyral and the like as well as their mixtures, which are utilized in formation of glass (col. 2).

The glass of MUSKAT is formed by polymerization of the target polymers in presence of plasticizers. Use of plasticizers gives the composition and in turn the article flexibility.

Plasticizers are listed in col. 3, or page 2 of the disclosure.

Plasticizers are therefore viewed as customary additives, often required in the composition, depending on the intended use of the article.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention that plasticizers would also be removed with solvent, when utilized. Such would be a must if the post-consumer article is plastic glass of MUSKAT. One of ordinary skill in the art would still be able to recover polystyrene of MUSKAT using the process of EP'293, especially when EP disclosure teaches glycol solvent of the present invention.

#### ***Allowable Subject Matter***

7. Claims 44 and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

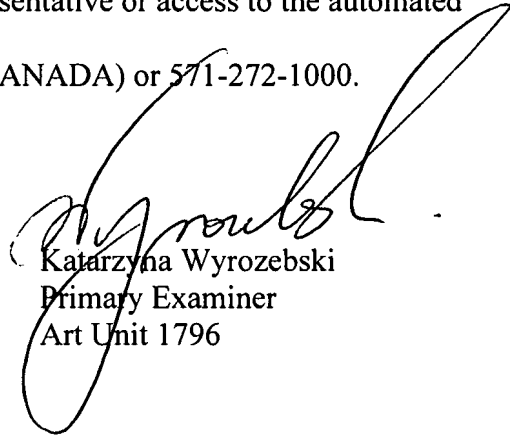
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski whose telephone number is (571) 272-1127. The examiner can normally be reached on Mon-Thurs 8:30 AM-2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Katarzyna Wyrozebski  
Primary Examiner  
Art Unit 1796

October 29, 2007